

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 23-31 and 33 are presently pending in this case. Claims 23 and 27 are amended and Claims 32 and 34 are canceled without prejudice or disclaimer by the present amendment. As amended Claims 23 and 27 are supported by canceled Claims 32 and 34, no new matter is added.

In the outstanding Official Action, Claims 23-25, 27-29, 31, and 33 were rejected under 35 U.S.C. §103(a) as unpatentable over Li (U.S. Patent No. 6,654,429) in view of Khayrallah et al. (U.S. Patent No. 6,047,171, hereinafter “Khayrallah”); and Claims 26, 30, 32, and 34 were rejected under 35 U.S.C. §103(a) as unpatentable over Li in view of Khayrallah and further in view of Mitra et al. (U.S. Patent No. 5,533,063, hereinafter “Mitra”).

With regard to the rejection of Claims 23 and 27 as unpatentable over Li in view of Khayrallah, that rejection is overcome by the addition of the subject matter of Claims 32 and 34 into Claims 23 and 27, respectively. With regard to the rejection of Claims 32 and 34 as unpatentable over Li in view of Khayrallah and further in view of Mitra, that rejection is respectfully traversed with respect to amended Claims 23 and 27.

Amended Claim 23 recites in part:

a channel estimator configured to perform a channel estimation on the basis of received pilot symbols; and
a filter configured to perform a channel estimation for data symbols between pilot symbols, *said filter being adaptively selected from a set of filters on the basis of an interference reference value and a Doppler frequency of the data symbol to be channel estimated*, said channel estimation being based on an estimated carrier to interference value ratio, said estimated carrier being a wanted carrier power value at a frequency subcarrier and a timeslot of a data symbol to be channel estimated.

The outstanding Office Action asserted that Mitra describes “selecting a filter based on a Doppler frequency of the estimated channel”, citing column 2, lines 39-40 of Mitra.¹ This portion of Mitra states that “another object of the invention is to filter multipath and Doppler spread interference from received signals.” The Office Action further asserts that Mitra describes “the filter takes into account the Doppler characteristics.”² However, these statements do not teach or suggest what is actually recited in claim, namely that a filter is selected from among a set of filters based on: (1) the estimated carrier to interference ratio, **and** (2) a Doppler frequency of the data symbol to be channel estimated. Mitra mentions in other portions as well the concept of Doppler spread interference, such as in column 1, lines 55-61, column 4, lines 32-40, and lines 47-50, and column 5, lines 1-12, but in no instance teaches or suggests **selecting a filter** being selected from among a set of filters **based on a Doppler frequency of the data symbol to be channel estimated**. In fact, Mitra describes several methods of designing a filter in columns 5-11, none of which have been cited by the outstanding Office Action as describing this feature. It is respectfully submitted that Mitra does not teach or suggest selecting a filter from a set of filters based on a Doppler frequency of the data symbol to be channel estimated as recited in amended Claim 23.

As none of the cited references teach or suggest selecting a filter based on a Doppler frequency of the estimated channel, the proposed combination cannot teach or suggest “a filter” as defined in amended Claim 23. Consequently, Claim 23 (and Claims 24-26 and 33 dependent therefrom) is patentable over Li in view of Khayrallah and further in view of Mitra.

Amended Claim 27 recites in part:

performing, by a filter, a channel estimation for data symbols between pilot symbols, said filter being adaptively selected from a set of filters on the basis of an interference

¹See the outstanding Office Action at page 7, lines 1-2.

²See the outstanding Office Action at page 7, lines 2-3.

reference value, said channel estimation being based on an estimated carrier to interference value ratio, the estimated carrier being a wanted carrier power value at a frequency subcarrier and a timeslot of a data symbol to be channel estimated, and said interference value is an interference reference value.

As noted above, none of the cited references teach or suggest selecting a filter based on a Doppler frequency of the estimated channel. Consequently, the proposed combination cannot teach or suggest “performing” as defined in amended Claim 27, and thus Claim 27 (and Claims 28-31 dependent therefrom) is also patentable over Li in view of Khayrallah and further in view of Mitra.

Accordingly, the pending claims are believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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